

REMARKS/ARGUMENTS

The foregoing amendments in the claims are of formal nature, and do not add new matter.

Prior to the present amendment, Claims 59-65, 68-70 and 74-85 were pending in this application. With this amendment, Claims 59-65, 70 and 74 have been amended to clarify what Applicants have always regarded as their invention, Claims 78-85 have been canceled and new Claims 86-87 have been added. The amendments to the claims and the new claims are fully supported by the specification and claims as originally filed and do not constitute new matter.

Claims 58-65, 68-70, 74-77 and 86-87 are pending after entry of the instant amendment.

Applicants expressly reserve the right to pursue any canceled matter in subsequent continuation, divisional or continuation-in-part applications.

Priority

Applicants note that Claims 59-65, 68-70 and 74-77 are granted the priority to March 8, 1999. See page 5 of the instant Office Action. Accordingly, Applicants respectfully submit that new Claims 86 and 87, which are dependent on Claim 60, are also entitled to the priority date of March 8, 1999.

Withdrawn Objections and/or Rejections

Applicants note and appreciate the withdrawal of the earlier objections and rejections under 35 U.S.C. §101, §112, second paragraph and §102(b). The remaining objections and rejections of Claims 58-65, 68-70 and 74-85 under 35 U.S.C. §112, second paragraph, §102(a) and §102(b) are addressed below.

Claim Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 59-62 and 74 remain rejected under 35 U.S.C. §112, second paragraph, for allegedly "being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the inventor." In particular, the Examiner contends that parts (c), (d) and (e) of Claims 59-62 are drawn to nucleic acids but "[i]t remains unclear which of these nucleic acid sequences the phrase 'wherein the isolated nucleic acid encodes a polypeptide that is a mitogen for inner ear supporting cells' refers to."

Without acquiescing to the Examiner's rejections, Claims 59-62 (and, as a consequence, those claims dependent from the same) have been amended to recite an isolated nucleic acid wherein the isolated nucleic acid encodes a polypeptide that is a mitogen for inner ear supporting cells. Applicants submit that parts (a)-(c) of Claims 60-61 and parts (a)-(d) of Claim 62 do not recite "isolated nucleic acid."

Accordingly, Applicants respectfully submit that the phrase "wherein the isolated nucleic acid encodes a polypeptide that is a mitogen for inner ear supporting cells" clearly refers to the isolated nucleic acid sequence recited in the preamble of Claims 59-62.

The Examiner contends that "part (e) of the claims does not recite any 'nucleic acid'." Without acquiescing to the Examiner's rejection, Applicants respectfully submit that although one skilled in the art would have clearly understood that "the full-length coding sequence of the cDNA" refers to a nucleic acid sequence, Claims 60-63 and 70 have been amended to recite "the full-length coding sequence of the nucleic acid sequence of cDNA deposited under ATCC accession number 209487."

Accordingly, Applicants request that the rejection of Claims 59-62 and 74 under 35 U.S.C. §112, second paragraph, be withdrawn.

Objections and Rejections

Claims 59-62 are objected to as allegedly "being dependent upon a cancelled claim."

As amended, Claims 59-62 are independent claims and thus no longer are dependent upon a canceled claim. Accordingly, Applicants believe that the present objection should be withdrawn.

Claims 59-65 and 74-77 are rejected under 35 U.S.C. §112, second paragraph, for allegedly "being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the inventor."

Applicants have Claim 59 to recite an isolated nucleic acid having at least 85% nucleic acid sequence identity to the nucleic acid sequence of SEQ ID NO:522. Claim 60 has been amended to recite an isolated nucleic acid having at least 90% nucleic acid sequence identity to the nucleic acid sequences of parts (a), (b) and (c).

Further, Claims 61 and 62 have been amended to recite an isolated nucleic acid encoding a polypeptide having at least 95 and 99% sequence identity to the amino acid sequences of parts (a)-(c) and parts (a)-(d), respectively.

Accordingly, Applicants respectfully submit that as amended, Claims 59-62 clearly recite the subject matter which Applicants regard as the invention. Hence, Applicants request that the rejection of Claims 59-62 and 74 under 35 U.S.C. §112, second paragraph, be withdrawn.

The Examiner also alleges that "claims 64-65 are indefinite. Applicants respectfully submit that as amended, Claims 64 and 65 recite the isolated nucleic acid of Claim 63 comprising a nucleic acid sequence encoding the polypeptide of SEQ ID NO:523 with or without its associated signal peptide. Accordingly, Applicants believe that the present objection should be withdrawn.

Claim Rejections Under 35 U.S.C. §102(b)

Claims 59-61, 74-80 and 82-84 remain rejected under 35 U.S.C. §102(b) as being anticipated by Struyk *et al.* (*The Journal of Neuroscience*, 15(3):2141-2156, March 1995). The Examiner alleges that "Struyk et al. teach a polynucleotide sequence encoding a polypeptide having 97% identity with the amino acid sequence of polypeptide of SEQ ID NO:523 lacking its associated signal peptide, the amino acid sequence of the polypeptide encoded by the full-length coding sequence of SEQ ID NO:522, and the amino acid sequence of the polypeptide encoded by the full-length coding sequence of the cDNA deposited under ATCC accession number 209487."

Without acquiescing to the rejection, Applicants submit that the cancellation of Claim 78-80 and 82-84 renders the rejection of these claims moot.

Further, Applicants enclose copies of the sequence alignments between (1) the nucleic acid sequence (Accession No. U16845) disclosed in Struyk *et al.* and the nucleic acid sequence of SEQ ID NO:522 of the present application; and (2) the amino acid sequence (Accession No. AAA67445) disclosed in Struyk *et al.* and the polypeptide sequence of SEQ ID NO:523 of the present application.

The nucleic acid sequence alignment clearly shows that the nucleic acid sequence of Struyk *et al.* has (1) 80.35% sequence identity over the entire length of the nucleic acid sequence SEQ ID NO:522; (2) 87.21% sequence identity over the coding region of SEQ ID NO:522 (the

percentage does not include difference due to the additional nucleotides missing from the middle of the coding sequence of SEQ ID NO:522); and (3) 90.30% sequence identity over the coding region without the signal sequence of SEQ ID NO:522.

In addition, the amino acid sequence alignment clearly shows that the amino acid sequence of Struyk *et al.* has (1) 91.5% sequence identity over the entire length of the polypeptide sequence of SEQ ID NO:523 and (2) 97.5% sequence identity over the entire length of SEQ ID NO:523, without signal sequence.

Accordingly, Applicants has amended Claim 59 to recite an isolated nucleic acid having at least 85% nucleic acid sequence identity to the full-length nucleic acid sequence of SEQ ID NO:522, wherein the isolated nucleic acid encodes a polypeptide that is a mitogen for inner ear supporting cells. Further, Claim 60 has been amended to recite, "An isolated nucleic acid having at least 90% nucleic acid sequence identity to (a) the nucleic acid sequence of SEQ ID NO:522, (b) the full-length coding sequence of the nucleic acid sequence of SEQ ID NO:522; or (c) the full-length coding sequence of the nucleic acid sequence of cDNA deposited under ATCC accession number 209487" Applicants note that Claim 60 does not recite an isolated nucleic acid having at least 90% nucleic acid sequence identity to the full-length coding sequence of the nucleic acid sequence of SEQ ID NO:522 lacking the nucleic acid sequence encoding the signal peptide.

Applicants has amended Claim 61 to recite, "An isolated nucleic acid encoding a polypeptide having at least 95% sequence identity to: (a) the amino acid sequence of the polypeptide of SEQ ID NO:523; (b) the amino acid sequence of the full-length coding sequence of the nucleic acid sequence of SEQ ID NO:522; or (c) the amino acid sequence of the full-length coding sequence of the nucleic acid sequence of cDNA deposited under ATCC accession number 209487" Applicants note that Claim 61 does not recite an isolated nucleic acid having at least 95% sequence identity to the amino acid sequence of the polypeptide of SEQ ID NO:523, lacking its associated signal peptide.

Claim 62 has been amended to recite, "An isolated nucleic acid encoding a polypeptide having at least 99% sequence identity to: (a) the amino acid sequence of the polypeptide of SEQ ID NO:523; (b) the amino acid sequence of the polypeptide of SEQ ID NO:523, lacking its associated signal peptide; (c) the amino acid sequence of the full-length coding sequence of the

nucleic acid sequence of SEQ ID NO:522; or (d) the amino acid sequence of the full-length coding sequence of the nucleic acid sequence of cDNA deposited under ATCC accession number 209487”

Finally, new Claims 86 and 87 are dependent on Claim 60 and recite 95% and 99% sequence identity, respectively. Claims 86 and 87 are fully supported by the specification and claims as originally filed and do not constitute new matter.

Applicants respectfully submit that as amended, the claims recite nucleic acid and polypeptide sequences that are not disclosed in Struyk *et al.* Therefore, Claims 59-62 and new Claims 86-87 are not anticipated by Struyk *et al.* Furthermore, Claim 74 (and, as a consequence, those claims dependent from the same) has been amended to be dependent on the amended Claims 59-62. Accordingly, Applicants respectfully request that the rejection of Claims 59-61 and 74-77 under 35 U.S.C. §102(b) as being anticipated by Struyk *et al.* be withdrawn.

Claim Rejections Under 35 U.S.C. §102(a)

Claims 74-85 are rejected under 35 U.S.C. §102(a) as being anticipated by Fukushima *et al.* (PCT publication WO/58668, publication date November 18, 1999). The Examiner alleges that "Fukushima *et al.* teach an isolated nucleic acid encoding a polypeptide identical to the polypeptide of SEQ ID NO:523."

Without acquiescing to the rejection, Applicants submit that the cancellation of Claim 78-85 renders the rejection of these claims moot. Furthermore, Claim 74 (and, as a consequence, those claims dependent from the same) has been amended to be dependent on the amended Claims 59-62. Accordingly, Applicants respectfully request that the rejection of Claims 74-77 under 35 U.S.C. §102(a) as being anticipated by Fukushima *et al.* be withdrawn.


CONCLUSION

In conclusion, the present application is believed to be in *prima facie* condition for allowance, and an early action to that effect is respectfully solicited. Should there be any further issues outstanding, the Examiner is invited to contact the undersigned attorney at the telephone number shown below.

Please charge any additional fees, including fees for additional extension of time, or credit overpayment to Deposit Account No. 08-1641 (referencing Attorney's Docket No. 39780-2630 P1C66).

Respectfully submitted,

Date: April 12, 2005

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